

- Majumdar, R.C. Ancient Indian Colonies in the Far East, Vol. 01, Modern Greater India Society, Lahore, 1927
- Kumar, Bachchan, (2005) “The Devaraja Cult and Khmer Architecture”, God and King, the Devaraja Cult in South Asian Art and Architecture: Proceedings of the Seminar 2001, No.2, Delhi: Daya Books
- Kulke, Hermann, (2010) Nagapattinam to Suvarnadwipa: Reflections on the Chola Naval Expeditions to Southeast Asia, Delhi: Manohar
- Ray, Himanshu Prabha (2021) Coastal Shrines and Transnational Maritime Networks Across India and Southeast Asia, Delhi: Routledge.
- Coedes, George, (1966) The Making of Southeast Asia, translated in English by H. M. Wright, London: Routledge & Paul.

**Note:** Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

#### DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE -3): Environment in Indian History

##### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Environment in Indian History	4	3	1	0	12 th Pass	NIL

**Learning Objectives:**

This course aims to introduce the students to the major themes in the environmental history of the Indian subcontinent. A historically informed understanding on how the past societies shaped the natural world shall enable the students to critically situate the environmental issues that we encounter at present. The issues include global warming, contestation over natural resources, changing land use patterns, human interaction with other living species, impacts of agrarian expansion, ecological consequences of imperialism, impacts of mega infrastructure projects, urban pollution, emergence of environmental justice movements and environmental regulations, changing ideas about the natural world, and gendered dimension of environmental degradation. The course has the following broad objectives: a) to introduce the historical studies that explores the long-term trajectories of man-nature interactions and revises the political history-based periodization of the sub-continent's past as self-contained ancient, medieval, and modern periods; b) to introduce interdisciplinary approaches- cartographic, geological, zoological, ecological knowledges -that helps historians study the crucial role played by ecology in the shaping of the past societies; c) to familiarize the students to the methods of using archaeological, bio and geo-archival sources, artistic depictions and oral history sources to study the past relationship between humans and the natural world. By the end of this course, the students are expected to develop an in-depth understanding of the interdisciplinary approaches to historical thinking and the significance of the environment in human history.

**Learning Outcomes:**

After completing this course, students should be able to:

- Understand the historical methodologies and concepts to explain the environmental contexts of the past social and cultural transformations.
- Develop a historical perspective on the complex relationship between society and nature from prehistory to the present in the context of the Indian subcontinent.
- Discuss how societies developed technologies, sources of energy, and modes of organizing lives to adapt to varied ecological landscapes.
- Discuss environmental issues within a socio-cultural framework.
- Examine the social, political and economic contexts of creating inequalities in resource use, with reference to the case studies regarding water rights, forest rights, and the right to have livable cities.
- Locate solutions to environmental problems within a framework of greater democratization of resource use.

**Course Content:****Unit I:** What is Environmental History

1. Historiography and Sources
2. Interdisciplinarity

**Unit II:** Living with Nature

1. Environment and Early Urban Societies: Harappan Civilization
2. Beliefs, Practices and Natural Resources

**Unit III:** Era of Major Agrarian Expansion

1. Pastoralism, Agrarian Expansion
2. Forests and Tribal Groups
3. Irrigation and Canals

**Unit IV:** Colonialism and Transformation of Nature

1. Changing Land Use Patterns; Railway and Deforestation, Dams and Hydroelectric Power
2. Inland Waterbodies and Fisheries
3. Urbanization and Environment; Delhi

**Unit V: Development, Environment, and Migration in Contemporary India**

1. Big Dams and Displacement; Narmada and Tehri
2. Gender and Environmental Justice
3. Green Revolution; Biodiversity Loss; Species Extinction

**Essential Readings and Unit Wise Teaching Outcomes:**

**Unit 1:** This unit provides an overview of environmental historiography of the Indian subcontinent. The first rubric introduces the methods, theoretical concepts, sources, and the major sub-fields of environmental history. The second rubric explores how archeological records, literary sources, bio-mass, artistic depictions of nature, material cultural artifacts and oral history sources are integrated into environmental history narratives. **(Teaching time: 9 hrs. approx)**

- Hughes, Donald (2006), *What is Environmental History?* Cambridge: Polity Press. pp. 1-17 [Chapter 1: “Defining Environmental History”]
- Mann, Michael (2013), “Environmental History and Historiography on South Asia: Context and some Recent Publications,” *South Asia Chronicle*, Vol. 3, pp. 324-357.
- Rangarajan, Mahesh (2015), *Nature and Nation: Essay on Environmental History*. Ranikhet: Permanent Black, pp. 1-45 [Chapter 1: “Introduction: Issues in the Writing of Environmental History”]

**Unit II:** This unit gives a synoptic overview of human interaction with the animals, plants, and natural elements that sustained life. It shows how from the times of gathering, scavenging and hunting to the beginning of agriculture, humans adapted to the environment even as they tried to manipulate it, and maintained harmony with it and advocated conservation of earthly resources. **(Teaching time: 9 hrs. approx.)**

- Mishra, V. N. (2008), “Climate, a Factor in the Rise and Fall of the Indus Civilization: Evidence from Rajasthan and Beyond,” In Mahesh Rangarajan, ed., *Environmental Issues in India: A Reader*. Delhi: Pearson, pp. 7-16.
- वी. एन मिश्रा (2010) जलवायु, सिंधुघाटी सभ्यता के उत्थान - पतन में एक घटक: राजस्थान और पारकेतथ्य, महेश रंगाराजन संपादित भारत में पर्यावरण के मुद्दे, पियर्सन, दिल्ली.
- Allchin, Bridget (1998), “Early Man and Environment in South Asia,” In Richard Grove, Vinita Damodaran, and Satpal Sangwan, *Nature and the Orient: The Environmental History of South and Southeast Asia*. Delhi: Oxford University Press, pp. 29-50.
- Lal, Makkhan, “Iron Tools, Forest Clearance and Urbanization in the Gangetic Plains,” In Mahesh Rangarajan, ed., *Environmental Issues in India: A Reader*. Delhi: Pearson, pp. 18-32.
- मखनलाल, (2010), गंगा के मैदानों में लोहे के उपकरण, वनों की सफाई और नगरीकरण का संबंध, महेश रंगाराजन संपादित भारत में पर्यावरण के मुद्दे, पियर्सन, दिल्ली.
- Thapar, Romila (2008), “Forests and Settlements”, In Mahesh Rangarajan, ed., *Environmental Issues in India: A Reader*. Delhi: Pearson, pp. 33-41.
- रोमिला थापर, वन और बस्ती, महेश रंगाराजन संपादित भारत में पर्यावरण के मुद्दे, पियर्सन, दिल्ली, 2010

- Gosling, David L. (2001), *Religion and Ecology in India and Southeast Asia*. London: Routledge.
- Rangarajan, Mahesh (2008), "The Forest and the field in Ancient India," In Mahesh Rangarajan, ed., *Environmental Issues in India: A Reader*. Delhi: Pearson, pp. 42-48.
- महेशरंगाराजन (2010), प्राचीन भारत में वन और खेत, महेशरंगाराजन संपादित भारत में पर्यावरण के मुद्दे, पियर्सन, दिल्ली.
- Chakravarti, Ranabir, "The Creation and Expansion of Settlements and Managements of Hydraulic Resources in Ancient India," In Richard Grove, et al, eds, *Nature and the Orient: The Environmental History of South and Southeast Asia*. Oxford: Oxford University Press, 1998, pp. 87-105.

**Unit III:** This unit explores the patterns and processes of the expansion of agrarian landscapes, pastoralism and forest economies in India up to the eighteenth century. Providing an overview of the dynamics of human-nature interaction during the medieval times will help students to challenge the notions of considering pre-modern environments as a timeless continuum.

**(Teaching time: 9 hrs. approx.)**

- Murty, M. L. K, (2012), "Sheep/Goat Pastoral Cultures in the South Decan: The Narrative as a Metaphor," In Rangarajan, Mahesh and K. Sivaramakrishanan, eds (2014), *India's Environmental History: A Reader*. Ranikhet: Permanent Black.
- Singh, Chetan (1995), "Forests, Pastoralists and Agrarian Society in Mughal India," In David Arnold & Ramachandra Guha, eds., *Nature, Culture, Imperialism: Essays on the Environmental History of South Asia*. Delhi: Oxford University Press, pp. 21-48.
- Guha, Sumit (2008), "A Historical Study of the Control of Grass and Fodder Resources in Eighteenth-Century Maharashtra," In Mahesh Rangarajan, *Environmental Issues in India: A Reader*. Delhi: Pearson, pp. 97-106.
- सुमितगुहा (2010) अठारहवींशताब्दीकेमहाराष्ट्रमेंघासऔरचारेपरनियंत्रण: एकऐतिहासिकअध्ययन, महेशरंगाराजनसंपादितभारतमेंपर्यावरणकेमुद्दे, पियर्सन, दिल्ली.
- Singh, Abha (2014), "Irrigating Haryana: The Pre-Modern History of the Western Yamuna Canal", in Habib, Irfan, *Medieval India 1: Researches in the History of India 1200-1750*, Delhi: Oxford University Press, pp.49-61.
- Sengupta, Nirmal (1985), "Irrigation: Traditional vs Modern", *Economic and Political Weekly*, Vol. 20, No.45-47, pp.1919-1938.

**Unit IV:** This unit explores how colonial capitalism as a powerful agent of environmental transformations made fundamental changes to the land use patterns and livelihood resources. The first rubric explores the environmental history of the colonial appropriation of forests as raw material for railways expansion and rivers as dams and other hydraulic infrastructures for industrial production and long-distance transportation. The second rubric elaborates how the colonial appropriation of water bodies and common lands through the new revenue policies, acts and regulations affected indigenous fishing and other livelihood patterns based on hydraulic resources. The third rubric elaborates the environmental problems of urbanization in the context of the colonial city of Delhi. **(Teaching time: 9 hrs. approx.)**

- Das, Pallavi (2013), "Railway fuel and its impact on the forests in colonial India: The case of the Punjab, 1860– 1884", *Modern Asian Studies*, Vol.47, No.4, pp.1283-1309.
- Morrison, Kathleen D. (2010), "Dharmic Projects, Imperial Reservoirs, and New Temples of India: An Historical Perspective on Dams in India," *Conservation and Society*, Vol. 8, No. 3, pp. 182-195.
- D'Souza, Rohan (2012), "Damming the Mahanadi River: The Emergence of Multi-Purpose River Valley Development in India (1943-946)," In Mahesh Rangarajan & K.

Sivaramakrishnan, eds., *India's Environmental History: Colonialism, Modernity, and the Nation*. Ranikhet: Permanent Black, pp. 550-583.

- Singh, Vipul (2018), *Speaking Rivers: Environmental History of a Mid-Ganga Flood Country, 1540-1885*. Delhi: Primus Books, pp. 122-158 [Chapter 6: "Decommonization of the River"].
- Reeves, Peter, (1995), "Inland Waters and Freshwater Fisheries: Some Issues of Control, Access and Conservation in Colonial India," In David Arnold & Ramachandra Guha, eds, *Nature, Culture, Imperialism: Essays on the Environmental History of South Asia*. Delhi: Oxford University Press, pp. 260-292.
- Gadgil, Madhav and Guha, Ramachandra. (1992). "Conquest and control." In Madhav Gadgil and Ramachandra Guha, eds., *This Fissured Land: An Ecological History of India*. Delhi: OUP, pp. 113- 145.
- Sharan, Awadhendra B. (2014), *In the City, Out of Place: Nuisance, Pollution, and Dwelling in Delhi, c. 1850-2000*. Delhi: Oxford University Press ["Introduction" and Chapter 4: "Pollution: Industrial Landscapes, 1936-2000"].

**Unit V:** This unit explains how the issues of development such as the construction of big dams and other mega infrastructural projects are often associated with displacement, biodiversity loss, species extinction, and how the industrialization of agricultural production transforms livelihood patterns and cultural landscapes. It offers a historical perspective on increasing the inequality of access to natural resources for women and the poor (**Teaching time: 9 hrs. approx.**)

- Sangvai, Sanjay (2008), "The Tragedy of Displacement," In Mahesh Rangarajan, ed., *Environmental Issues in India: A Reader*. Delhi: Pearson, pp. 437-443.
- संजय संगवई(2010), विस्थापनाकाएकदर्दनाककिस्सा, महेशरंगाराजनसंपादितभारतमेंपर्यावरणकेमुददे, पियर्सन, दिल्ली.
- Asthana, Vandana (2012), "Forced Displacement: A Gendered Analysis of the Tehri Dam Project," *Economic and Political Weekly*, Vol. 47, No. 47/48, pp, 96-102.
- Singh, Satyajit K. (1990), "Evaluating Large Dams in India," *Economic and Political Weekly*, Vol. 25, No. 11, pp. 561-574.
- Agarwal, Bina. (1992). "The Gender and Environment Debate: Lessons from India", *Feminist Studies*, Vol. 18, No.1. pp. 119-158.
- Shiva, Vandana. (1988). "Women in the Food Chain" (Ch.5) in Vandana Shiva, *Staying Alive: Women, Ecology and Survival in India*. New Delhi: Kali for Women. pp.96-178.
- McNeill, J. R. (2008), "The Green Revolution," In Rangarajan, Mahesh, *Environmental Issues in India: A Reader*. Delhi: Pearson, pp. 184-194.
- Shiva, Vandana (2016), *Stolen Harvest: The Hijacking of the Global Food Supply*. Kentucky: The University Press of Kentucky, [Chapter 1: "The Hijacking of the Global Food Supply"] pp. 5-20.
- Shiva, Vandana (1993), *The Violence of the Green Revolution: Third World Agriculture, Ecology and Politics*, London and New Jersey: Zed Books, pp. 19-60; [Chapter 1: "Science and Politics in the Green Revolution"], pp. 61-102 [Chapter 2: "Miracle Seeds' and the destruction of Genetic Diversity"]; pp. 171-193 [Chapter 5: "The Political and Cultural Costs of the Green Revolution"].

#### **Suggested Readings:**

- Erdosy, George (1998), "Deforestation in Pre- and Proto Historic South Asia," In Richard Grove, Vinita Damodaran, and Satpal Sangwan, *Nature and the Orient: The*

- Environmental History of South and Southeast Asia*. Delhi: Oxford University Press, pp. 51-69.
- Adve, Nagraj (2022), *Global Warming in India: Science, Impacts, and Politics*. Bhopal: Eklavya Foundation.
  - Agarwal, Ravi (2010), "Fight for a Forest," In *Seminar*, No. 613, pp. 48-52 (On Delhi Ridge)
  - Bhattacharya, Neeladri (1992), 'Colonial State and Agrarian Society,' In Burton Stein, ed. *The Making of Agrarian Policy in British India, 1770-1900*. Delhi: Oxford University Press.
  - Bulliet, Richard. (2005). *Hunters, Herders and Hamburgers: The Past and Future of Human-Animal Relationships*. New York: Colombia University Press. pp. 205 -224.
  - D'souza, Rohan (2006), *Drowned and Dammed: Colonial Capitalism and Flood Control in Eastern India*. New Delhi: Oxford University Press.
  - Dangwal, DhirendaraDatt (2009), *Himalayan Degradation: Colonial Forestry and Environmental Change in India*. New Delhi: Cambridge University Press.
  - Gadgil, Madhav and Ramachandra Guha (2000), *The Use and Abuse of Nature*. Delhi: Oxford University Press.
  - Grove, Richard (1997), *Ecology, Climate and Empire*. Delhi: Oxford University Press.
  - Hardiman, David (1996), 'Small-dam Systems of the Sahyadris,' in David and Ramachandra Guha, eds, *Nature, Culture, Imperialism: Essays on the Environmental History of South Asia*. Delhi: Oxford University Press, pp. 185-209.
  - Kapur, Nandini Sinha (2011), *Environmental History of Early India: A Reader*. New Delhi: Oxford University Press.
  - Malamoud, Charles (1998), *Village and Forest in Ancient India*. Delhi: Oxford University Press.
  - Mann, Michael (2007), "Delhi's Belly: The Management of Water, Sewerage and Excreta in a Changing Urban environment during the Nineteenth Century," *Studies in History*, Vol. 23, No. 1, pp. 1-31.
  - Meadow, R. H. (1981), "Early Animal Domestication in South Asia: A First Report of Faunal Remains from Mehrgarh, Pakistan," In H. Hartel, ed. *South Asian Archaeology*. Berlin: Dietrich Reimer Verlag, pp. 143-79.
  - Murali, Atluri (1995), "Whose Trees? Forest Practices and Local Communities in Andhra, 1600-1922," In David Arnold & Ramachandra Guha, eds., *Nature, Culture, Imperialism: Essays on the Environmental History of South Asia*. Delhi: Oxford University Press, pp. 86-122.
  - Rangarajan, Mahesh (2002), "Polity, Ecology and Landscape: Fresh Writing on South Asia's Past," *Studies in History*, Vol 17, No. 1, pp. 135-48.
  - Rangarajan, Mahesh ed. (2008), *Environmental Issues in India*. Delhi: Pearson.
  - Singh, Satyajit K. (1990), "Evaluating Large Dams in India," *Economic and Political Weekly*, Vol. 25, No. 11, pp. 561-574.
  - Singh, Vipul (2018), *Speaking Rivers: Environmental History of a Mid-Ganga Flood Country, 1540-1885*. Delhi: Primus Books

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